Amendments to the Drawings:

Fig. 2 has been amended to replace the first item 30 with the item 28, as shown in the originally filed informal drawings. Additionally, the second Fig. 2 has been properly remarked as Fig. 4. Annotated sheets, showing the changes made, are additionally being provided herewith.

Attachment: Two (2) Replacement Sheets
Two (2) Annotated Sheets Showing Changes

Remarks:

Reconsideration of the application, as amended herein, is respectfully requested.

Claims 1 - 29 are presently pending in the application. Claims 11, 23, 28 and 29 have been amended. As it is believed that the claims were patentable over the cited art in their original form, the claims have not been amended to overcome the references.

In item 2 of the above-identified Office Action, the drawings were objected to as allegedly not showing element 28 of the "downmix channels 28 and 30", as well as, Fig. 4 being mismarked. Fig. 2 has been amended to replace the first item 30 with the item 28, as shown in the originally filed informal drawings. Additionally, the second Fig. 2 has been properly remarked as Fig. 4. Annotated sheets, showing the changes made, are additionally being provided herewith. It is believed that these amendments to Figs. 2 and 4 address the concerns raised in item 2 of the Office Action.

In item 3 of the Office Action, the specification was objected to on the basis of certain informalities. The Examiner's suggested corrections have been made.

In item 4 of the Office Action, the specification was objected to as allegedly not disclosing the "composite channels", recited in claim 11, line 3. Claim 11 has been amended to better clarify the subject matter of that claim. It is believed that the amendments to claim 11 addresses the concern raised in item 4 of the Office Action.

In item 5 of the Office Action, the specification was objected to as allegedly not disclosing the "perceptual encoder", recited in claim 23, line 2. Claim 23 has been amended to better clarify the subject matter of that claim. It is believed that the amendments to claim 23 addresses the concern raised in item 5 of the Office Action.

In item 6 of the Office Action, Claims 28 and 29 were rejected as allegedly being non-statutory subject matter under 35 U.S.C. § 101. Claims 28 and 29 have been amended to address the concerns raised in item 6 of the Office Action. As such, the claims now recite, among other limitations, two different, particularly recited (i.e., one for claim 28 and one for claim 29) "computer implemented" methods. The amendment to Applicants' claims 28 - 29 are supported by the specification of the instant application, for example, on page 31 of the instant application, lines 14 - 24, which state:

> Depending on the application environment, the inventive method for processing or inverse processing can be implemented in hardware or in software. **The implementation can be a digital storage medium such as a disk or a CD having electronically readable control signals, which can cooperate with a programmable computer system such that the inventive method for processing or inverse processing is carried out.** Generally stated, the invention therefore, also relates to a computer program product having a program code stored on a machine-readable carrier, the program code being adapted for performing the inventive method, **when the computer program product runs on a computer.** In other words, the invention, therefore, also relates to a computer program having a program code for performing the method, **when the computer program runs on a computer.** [emphasis added by Applicants]

As such, each of Applicants' claims 28 and 29 recite particular structure (i.e., a computer) that performs a particular method (i.e. a "computer implemented" method). Thus, Applicants believe that claims 28 and 29 are presently directed towards statutory subject matter under 35 U.S.C. § 101, and respectfully request that the instant rejection be withdrawn.

In item 8 of the Office Action, claims 1 - 8, 11, 16, 19, 21, 22, 24 and 26 - 29 were rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by U. S. Patent No. 5,701,346 to Herre et al ("**HERRE**").

In item 10 of the Office Action, claims 9, 12, 13, 15 and 25 were rejected under 35 U.S.C. § 103(a) as allegedly being

obvious over **HERRE** in view of Stoll, "MPEG Audio Layer II: A Generic Coding Standard for Two and Multichannel Sound for DVB, DAB and Computer Multimedia", September 1995 ("**STOLL**"). In item 11 of the Office Action, claim 14 was rejected under 35 U.S.C. § 103(a) as allegedly being obvious over **HERRE** in view of **STOLL**, and further in view of U. S. Patent No. 6,442,517 to Miller et al ("**MILLER**"). In item 12 of the Office Action, claim 10 was rejected under 35 U.S.C. § 103(a) as allegedly being obvious over **HERRE** in view of Theile et al., "MUSICAM-Surround: A Universal Multi-channel Coding system Compatible with ISO 11172-3", pp. 1-4, October 1992 ("**THEILE**"). In item 13 of the Office Action, claim 17 was rejected under 35 U.S.C. § 103(a) as allegedly being obvious over **HERRE** in view of U. S. Patent Application Publication No. 2004/0181393 to Baumgarte ("**BAUMGARTE**"). In item 14 of the Office Action, claim 18 was rejected under 35 U.S.C. § 103(a) as allegedly being obvious over **HERRE** in view of **BAUMGARTE**, and further in view of **MILLER**. In item 15 of the Office Action, claim 20 was rejected under 35 U.S.C. § 103(a) as allegedly being obvious over **HERRE** in view of Herre et al., "Intensity Stereo Coding", 1994, Feb. 26 - Mar 011 ("**HERRE2**"). In item 16 of the Office Action, claim 23 was rejected under 35 U.S.C. § 103(a) as allegedly being obvious over **HERRE** in view of U. S. Patent No. 5,040,217 TO Brandenburg et al ("**BRANDENBURG**").

Applicants respectfully traverse the above rejections.

More particularly, claim 1 recites, among other limitations:

> means for providing a first downmix channel and a second downmix channel, the first and the second downmix channels being derived from the original channels;
>
> **means for calculating channel side information for a selected original channel of the original signals**, the means for calculating being operative to calculate the channel side information **such that a downmix channel or a combined downmix channel including the first and the second downmix channel, when weighted using the channel side information, results in an approximation of the selected original channel**; [emphasis added by Applicants]

All of Applicants' independent claims recite similar apparatus and/or method limitations to those cited above in connection with claim 1.

Section 8 of the Office Action analogizes the compatible signals $L_{c'}$ and $R_{c'}$ of **HERRE**, to Applicants' first and second downmix channels (respectively). Section 8 of the Office Action additionally alleges that Applicants' claimed means for calculating channel side information is also shown in **HERRE**. Applicants respectfully disagree.

More particularly, Applicants' claims require, among other things, calculating the channel side information such that a

downmix channel or a combined downmix channel including the first and the second downmix channel, when weighted using the channel side information, results in an approximation of the selected original channel. However, in **HERRE**, the compatible signals $L_{c'}$ and $R_{c'}$ of **HERRE** are **never** used to calculate **any** channel side information. As clearly shown in Fig. 1A of **HERRE**, the signals $L_{c'}$ and $R_{c'}$ of **HERRE, are simply quantized** via blocks 2C and 2D of Fig. 1A of **HERRE**, and these **quantized, compatible signals** are input into the bit stream packer (3 of Fig. 1 of **HERRE**). **HERRE** fails to teach or suggest any other use for the compatible signals $L_{c'}$ and $R_{c'}$ of **HERRE**, apart from the quantization of these signals in the blocks 2C and 2B.

However, all of Applicants' claims clearly recite, among other limitations, **that the channel side information is calculated such that a downmix channel or a combined downmix channel including the first and the second downmix channel, when weighted using the channel side information, results in an approximation of the selected original channel.**

It is unclear from the Office Action which portions of **HERRE** are alleged to disclose, or are alleged to be analogous to, Applicants' claimed "channel side information" or "a selected original channel". The channel side information calculated by Applicants' claimed invention, is described in the

specification of the instant application, for example, on page 13, lines 30-32, which states:

> Inventively, channel side information for a selected original channel is **obtained based on joint stereo techniques** such as intensity stereo coding or binaural cue coding.

Applying the above to **HERRE**, if one has, for example, the left original channel L in Fig. 1A of **HERRE**, then, in order to perform Applicants' claimed invention, one would then have to use the left compatible signal L_c, for performing the joint stereo calculation. This would mean that, to disclose Applicants' claimed invention, **HERRE must** teach or suggest, among other things, inputting **L_c, and L of Fig. 1A of HERRE, into the joint stereo coder** of **HERRE**. Additionally, to anticipate Applicants' claimed invention, the output of **joint stereo coder** (i.e. "scaling factor a1", as illustrated in Fig. 4B of **HERRE**) would have to be input into the bit stream packer 3 of Fig. 1A of **HERRE**.

However, **HERRE** clearly does not disclose such a procedure, since, in **HERRE**, the two compatible signals L_c, and R_c, are **only** required **for constructing the left surround channel L_s, and R_s,**. In **HERRE, the two compatible signals L_c, and R_c, are not used for calculating the left channel, the right channel or the center channel, L', R' and C' respectively.** This can be seen,

for example, from Fig. 1C of **HERRE**, as well as, col. 5 of **HERRE**, lines 25-30.

As outlined in col. 5 of **HERRE**, line 15, the decoded signals L', R' and C' of **HERRE**, are **not** derived using the stereo compatible signals L_s' **and** R_s' of **HERRE** (i.e., which were analogized to Applicants first and second downmix channels, in the Office Action). As such, **HERRE** fails to teach or suggest, among other limitations of Applicants' claims, **calculating channel side information for selected original channels of the original signal**, in the manner specifically recited in Applicants' claims.

Although the Office Action points to col. 1 of **HERRE**, lines 60-67, as allegedly disclosing such a calculation, Applicants respectfully disagree. Rather, col. 1 of **HERRE**, lines 60 - 67 (when read in combination with Fig. 4B of **HERRE**) does **not** teach or suggest that a joint stereo coding operation is performed using the left compatible signal L_c' or the right compatible signal R_c'. Instead, the cited portion of **HERRE** discloses that a "**single transmitted signal**" is used for joint stereo decoding. However, in **HERRE**, the left compatible signal L_c' or the right compatible signal R_c' would **not** result in a selected channel when weighted using a channel side information, as required by Applicants' claims.

Even if one would say that the "selected channel" is the left surround channel or the right surround channel, since these channels are calculated using the left compatible signal $L_{c'}$ or the right compatible signal $R_{c'}$, **HERRE** does not teach or suggest, among other things, **generating channel side information which, when used for weighting the downmix signal, results in an approximation of the selected original channel,** as required by Applicants' claims. This is due to the fact, that in the compatibility matrix of **HERRE**, a weighting using weighting factors takes place, which are predefined as outlined in equation (3) of **HERRE** (i.e. which are **not** transmitted). **HERRE** fails to teach or suggest **that the values a, b, c are "channel side information", which are calculated using the compatible signal and the left surround signal and are then transmitted.**

Stated differently, **HERRE** would only disclose Applicants' particularly claimed calculation of the channel side information, if the left surround signal L_s and the left compatible signal $L_{c'}$ were additionally provided into a "joint stereo coder box", which is clearly not the case in **HERRE**. As such, **HERRE** fails to teach or suggest, among other limitation so Applicants' claims, **calculating the channel side information such that a downmix channel or a combined downmix**

channel including the first and the second downmix channel, when weighted using the channel side information, results in an approximation of the selected original channel, as required by Applicants' claims.

Further, **HERRE** fails to teach or suggest, among other limitations of Applicants' claims, a channel reconstructor, as particularly recited in the last paragraph of Applicants' claim 22. More particularly, in **HERRE**, the left compatible signal L_c, and the right compatible signal R_c, are **not** used for calculating channel side information and are, additionally, **not** weighted using the channel side information to obtain an approximation of a selected original channel. As such, Applicants' claim 22 is further distinguished from the **HERRE** reference.

For the foregoing reasons, among others, Applicants' claims are believed to be patentable over the **HERRE** reference. The **STOLL**, **MILLER**, **THIELE**, **BAUMGARTE**, **HERRE2** and **BRANDENBURG** references, cited in the Office Action with **HERRE**, and each other, against certain of Applicants' dependent claims, do not cure the above-discussed deficiencies of the **HERRE** reference. As such, Applicants' claims are believed to be patentable over **HERRE**, **STOLL**, **MILLER**, **THIELE**, **BAUMGARTE**, **HERRE2** and **BRANDENBURG**, taken alone, or in any combination.

It is accordingly believed that none of the references, whether taken alone or in any combination, teach or suggest the features of claims 1, 22 and 27 - 29. Claims 1, 22 and 27 - 29 are, therefore, believed to be patentable over the art. The dependent claims are believed to be patentable as well because they all are ultimately dependent on claims 1 or 22.

In view of the foregoing, reconsideration and allowance of claims 1 - 29 are solicited.

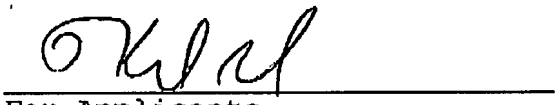
In the event the Examiner should still find any of the claims to be unpatentable, counsel would appreciate receiving a telephone call so that, if possible, patentable language can be worked out.

If an extension of time for this paper is required, petition for extension is herewith made.

Please charge any fees that might be due with respect to Sections 1.16 and 1.17 to the Deposit Account of Lerner Greenberg Stemer LLP, No. 12-1099.

Applic. No. 10/679,085
Response Dated July 18, 2007
Responsive to Office Action of April 18, 2007

Respectfully submitted,



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July 18, 2007

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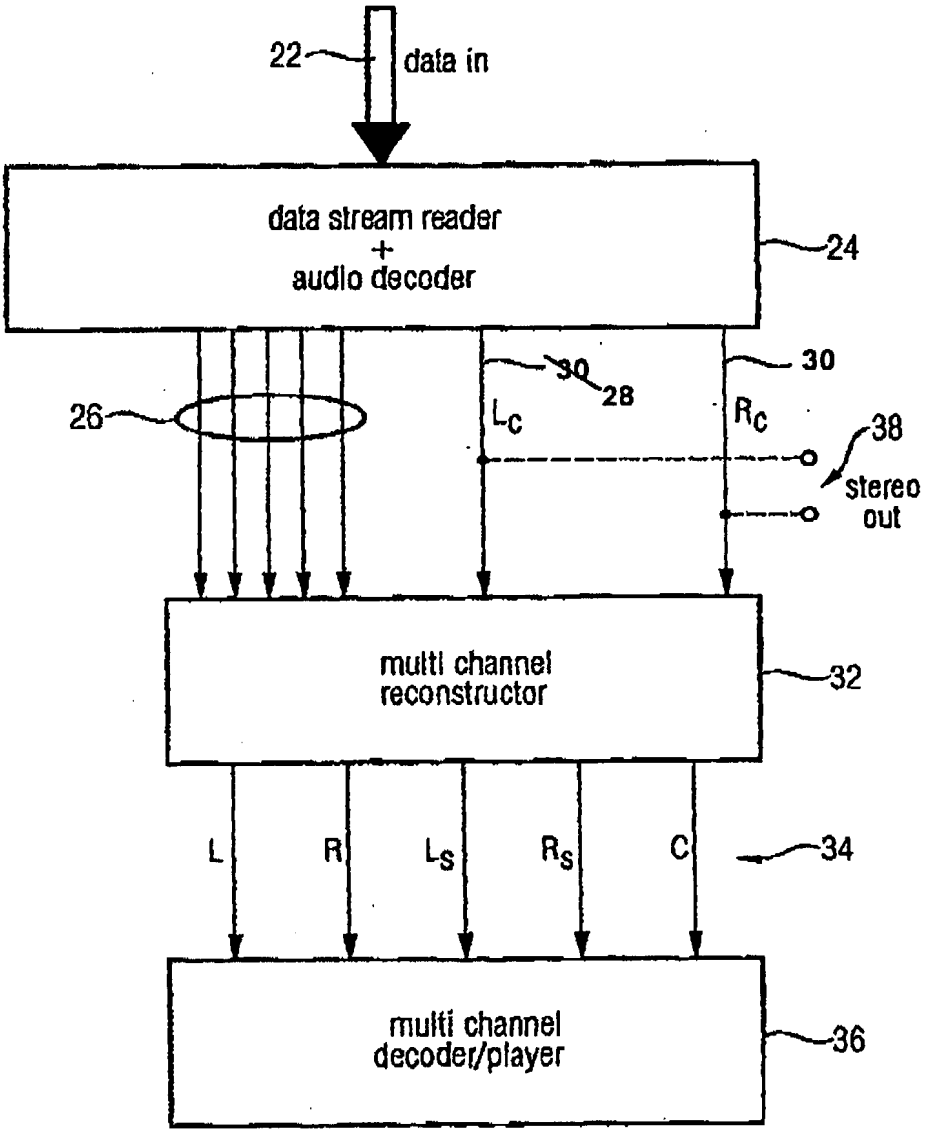
Annotated Sheet

FIG 2 (Decoder)



Annotated Sheet

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FIG 2/4 (encoder side)

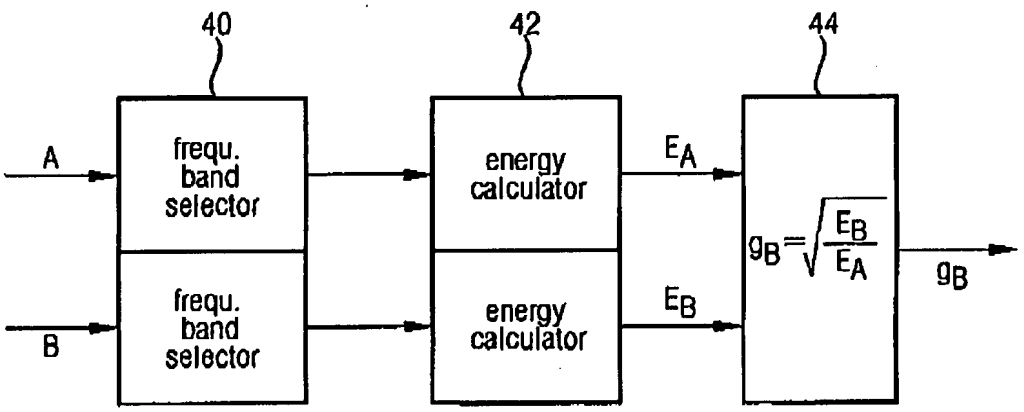

FIG 5 (decoder side)